

CLAIMS

We claim:

1. A process of glazing by interposing sheet adhesive between glass and plastic layers, comprising:
 - providing a first glass layer;
 - laying a co-extruded A-B film on the first glass layer with the B layer to the glass, wherein the B layer is an adhesive material and the A layer is an expendable polymeric layer; and
 - removing the extendable layer to expose the adhesive layer; and
 - laying a plastic layer on the adhesive layer, wherein the plastic layer has a first and second side, and wherein the first side is in contact with the adhesive.
2. A process according to claim 1, further comprising the steps of:
 - laying an A-B film on the second side of the plastic layer with the B side to the plastic layer;
 - removing the expendable polymeric layer to expose the adhesive layer; and
 - laying a second glass layer on the exposed adhesive layer.
3. A method according to claim 1, wherein the A-B film is prepared by a co-extruding an A-B-A laminate and removing one of the A layers.
4. A method according to claim 2, wherein the A-B film is prepared by a co-extruding an A-B-A laminate and removing one of the A layers.
5. A method according to claim 1, wherein the expendable layer comprises a polyolefin.
6. A method according to claim 1, wherein the expendable layer comprises polyethylene.

7. A method according to claim 1, wherein the expendable layer comprises polypropylene.
8. A method according to claim 1, wherein the adhesive layer comprises thermoplastic polyurethane.
9. A method according to claim 1, wherein the adhesive layer has a thickness of 0.005-0.090 inches.
10. A method according to claim 1, wherein the expendable polymeric layer has a thickness of 0.003-0.005 inches.
11. A method according to claim 1, wherein the plastic layer comprises polycarbonate.
12. A method according to claim 1, wherein the plastic layer comprises a thermoplastic.

13. A co-extruded A-B composite sheet, wherein A is an expendable polymeric layer and B is a thermoplastic adhesive layer.
14. A composite according to claim 13, wherein the expendable polymeric layer comprises a polyolefin.
15. A composite according to claim 13, wherein the expendable polymeric layer comprises polyethylene.
16. A composite according to claim 13, wherein the expendable polymeric layer comprises polypropylene.
17. A composite according to claim 13, wherein the thermoplastic layer comprises a thermoplastic polyurethane adhesive.
18. A composite according to claim 13, wherein the thermoplastic layer comprises a plurality of individual adhesive layers.
19. A composite according to claim 13, wherein the expendable polymeric layer has a thickness of 0.003-0.01 inches.
20. A composite sheet according to claim 13, wherein the thermoplastic polyurethane layer has a thickness of 0.005-0.090 inches.
21. A composite sheet according to claim 13, wherein the expendable polymeric layer has a tensile strength greater than the mechanical bond between the thermoplastic polyurethane layer and the expendable polymeric layer.

22. A co-extruded A-B-A composite sheet, wherein A is an expendable polymeric layer and B is a thermoplastic adhesive layer.
23. A composite sheet according to claim 22, wherein A comprises a polyolefin.
24. A composite sheet according to claim 22, wherein A comprises a polyethylene.
25. A composite sheet according to claim 22, wherein A comprises a polypropylene.
26. A composite sheet according to claim 22, wherein the adhesive layer comprises a thermoplastic polyurethane.
27. A composite sheet according to claim 22, wherein the thermoplastic polyurethane layer comprises a plurality of individual adhesive sheets.
28. A composite sheet according to claim 22, wherein the expendable polymeric layer has a thickness of 0.003-0.010 inches.
29. A composite sheet according to claim 22, wherein the thermoplastic polyurethane layer has a thickness of 0.005-0.1 inches.
30. A composite sheet according to claim 22, wherein the expendable polymeric layer has sufficient thickness so that tensile strength of the expendable polymeric layer is greater than the strength of the mechanical bond between the expendable polymeric layer and the thermoplastic polyurethane layer.

31. A method of preparing a multilayer plastic film comprising at least one thermoplastic polyurethane layer in contact with at least one polymeric expendable layer, comprising:

co-extruding a sheet of thermoplastic polyurethane and a sheet of the polymeric expendable layer.

32. A method according to claim 31, wherein the polymeric expendable layer comprises a polyolefin.

33. A method according to claim 31, wherein the polymeric expendable layer comprises polyethylene.

34. A method according to claim 31, wherein the polymeric expendable layer comprises polypropylene.

35. A method according to claim 31, wherein the multilayer plastic film comprises A-B-A, where B is the at least one thermoplastic polyurethane layer and A is the polymeric expendable layer.

36. A method according to claim 31, wherein the thermoplastic polyurethane layer has a thickness of 0.005-0.090 inches.

37. A method according to claim 31, wherein the polymeric expendable layer has a thickness of 0.003-0.010 inches.

38. A method according to claim 31, wherein the polymeric expendable layer has a thickness of 0.003-0.005 inches.

39. A process for making a multilayer impact resistant glass composite, comprising the steps of:

- providing a glass layer;
- providing a plastic layer;
- interposing an adhesive between the glass layer and the plastic layer;
- pressing the layers together to adhere the glass layer to the plastic layer;

wherein the step of interposing the adhesive comprises removing at least one polymeric expendable layer from an adhesive sheet,

wherein the adhesive sheet is prepared by co-extruding a thermoplastic adhesive material and a polymeric material forming the polymeric expendable layer.

40. A method according to claim 39, wherein the thermoplastic adhesive material comprises thermoplastic polyurethane.

41. A method according to claim 39, wherein the polymeric material forming the polymeric expendable layer comprises a polyolefin.

42. A method according to claim 39, wherein the polymeric material forming the polymeric expendable layer comprises a polypropylene.

43. A method according to claim 39, wherein the polymeric material forming the polymeric expendable layer comprises a polyethylene.

44. A method according to claim 39, wherein the adhesive sheet comprises a thermoplastic polyurethane layer in contact with a polyolefin layer, and wherein the tensile strength of the polyolefin layer is greater than the mechanical bond between the polyolefin and the thermoplastic polyurethane layer.

45. A method according to claim 44, wherein the polyolefin layer is on one side of the thermoplastic polyurethane layer.

46. A method according to claim 44, wherein the polyolefin layer is on both sides of the thermoplastic polyurethane layer.